

Serial No. 10/812,137
Amendment Under 37 CFR §1.116
Response to Final Rejection dated March 8, 2006

REMARKS/ARGUMENTS

Applicant respectfully requests reconsideration and withdrawal of the objections and rejections set forth in the above-identified Final Rejection.

By this Amendment, in order to advance the prosecution of the application the features of claim 44 have been incorporated into sole independent claim 43. Claim 44 has accordingly been canceled. In addition, claims 45 and 51-54 have been similarly canceled.

Claim 37 has been amended to correct a error in the previous amendment, and now properly recites that the antifog composition is coated on to the first surface of the sealant film rather than on to the second surface of the sealant film.

Upon entry of this Amendment there will be a single independent claim (claim 43) and dependent claims 33-37 and 46-50 remaining in the application. It is respectfully submitted that all of these claims are patentable and should be allowed.

With regard to the objection to the previous amendment under 35 USC §132 (a), it is respectfully submitted that this objection has been overcome by the amendment to claim 37 regarding which surface of the sealant film the antifog composition is coated on. Accordingly, it is respectfully submitted that this objection has been overcome and should be withdrawn.

Claim 37 was rejected under 35 USC §112, first paragraph. This rejection likewise related to which surface of the sealant film the antifog composition is coated on. With the above amendment to claim 37, it is respectfully submitted that such rejection has been overcome. The Examiner is thanked for his identification of the error in claim 37 and Applicant submits that as presently amended claim 37 fully complies with 35 USC §112. Accordingly, withdrawal of such rejection is submitted to be in order and is respectfully requested.

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Regarding the prior art rejections, independent claim 43 now recites that the protective film employed in the process is a polyurethane. Applicant respectfully submits that the features of claim 43 and its dependent claims are not taught or suggested by the prior art, and are allowable.

A brief summary of the invention may be helpful at this point. The invention relates to a process of making a multilayered film which has particular use in sealing a food package that includes a container having an open portion, with the multilayered film sealing the open portion. The multilayered film is an antifog/barrier laminate useful in meat packaging, and in particular packaging in a controlled (or modified) atmosphere environment. The film itself is claimed in the parent application, which has issued as USP 6,726,968. The food package is claimed in a companion application that has issued as USP 6,942,908.

The problem with the prior art films used in this type of structure stemmed from the fact that the antifog compositions were either blended into or coated onto a sealant film. When the film was wound up in a roll for storage and shipping, the antifog composition would tend to be drawn toward polar materials (such as nylon) and away from non-polar materials, such as polyethylene which is typically used as the sealant layer. In a roll configuration, the antifog-containing layer is brought into direct contact with the adjacent nylon layer. As a result, the antifog component tended to migrate out of its existing layer and into the nylon layer, which compromises the performance of the nylon layer as well as degrades the antifog property of the film.

The present invention is a process wherein, inter alia, a protective film is provided on the surface of the nylon film that is opposite to the antifog-containing film. As claimed in claim 43, the protective film is a polyurethane film. The use of this protective film ensures that the antifog-containing component layer is not in direct contact with the nylon film of an adjacent layer of the roll. Migration of the antifog component is prevented, such that the properties of the nylon film are retained and the antifog layer can function as intended to prevent the package from becoming cloudy.

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In the Final Rejection several prior art rejections were made. Since the sole independent claim incorporates the features of previous dependent claim 44, it is submitted that the only relevant rejection is that pertaining to claim 44. However, for completeness all of the applied references will be discussed.

Claim 44 was rejected under 35 USC 103 (a) as being unpatentable over Coyle et al. (USP 3,570,748 – newly cited) in view of the admitted prior art and Bauer et al. (USP 5,837,358 – newly applied). This rejection is most respectfully traversed.

Coyle et al. was stated as disclosing a process for forming a multilayered film, which includes adhering a nylon film to a sealant film made from polyethylene, adhering a protective film to the nylon film, and winding the film into a roll.

It is pointed out that Coyle et al. has nothing to do with the problems that are addressed by this invention. Coyle et al. does not relate to a process of forming a film for use in modified atmosphere packaging wherein a layer includes an antifog composition. Moreover, Coyle et al. does not disclose the use of a protective film to prevent migration of the antifog composition from a polyethylene layer to a nylon layer.

Rather, Coyle et al. relates to the extrusion coating of a thin layer of nylon onto a polyethylene film in order to reduce the cost of the film. Coyle et al. state that previous films required the use of a thick nylon film. See column 1, lines 33-45 and 52-56.

A layer of saran (said to be a copolymer of vinylidene chloride and acrylonitrile) is optionally included in the structure. The Figure 1 embodiment of Coyle et al. has a nylon layer adhered to a polyolefin film via an adhesion promoting primer, without a saran layer. When a saran coating is employed, it can either be in between the nylon and polyethylene layers, as shown in the preferred Figure 2 embodiment (also between two layers of primer), or the saran coating can be on the outside of the nylon layer as shown in the Figure 3 embodiment (with a layer of polyethylene imine between the saran layer and the nylon layer).

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In one aspect of their invention, the nylon extrusion coated film is passed through a steam chamber in order to increase the moisture content of the nylon. This is said to impart the film with plastic recovery properties (see column 2, lines 14-27).

In the Figure 2 embodiment, Coyle et al. disclose that providing the saran coating between the nylon and polyolefin layers protects the saran layer and prevents localized disruption of the coating which would lead to loss of barrier properties (see column 5, lines 25-30). Clearly there is no intent for the saran layer to be a "protective layer" since it itself needs to be protected.

In the Figure 3 embodiment, Coyle et al. disclose that the presence of the saran coating on the outside of the nylon layer helps to retain the desired enhanced moisture content of the nylon film (after treatment via a steam chamber). See column 5, lines 40-45. In this structure, the saran layer functions to reduce moisture from escaping the nylon layer, and is not a protective layer for the nylon to prevent ingress of anything.

The invention of Coyle et al. is disclosed as a means of producing a composite film of nylon and polyolefin in an economical manner, as compared with composites formed from polyethylene terephthalate and nylon. See column 6, lines 25-29. The film of Coyle et al. is said to be useful to prepare boilable bags or pouches, as well as packages of other conventional shapes and styles. See column 6, lines 32-34. There is no disclosure of a method of making a multilayered film for use in modified atmosphere packaging of meats and the like.

It is clear that Coyle et al. has nothing to do with a film that is intended for use in modified atmosphere packaging since they do not disclose or suggest the use of an antifog composition in any of the film layers. None of the specific uses disclosed by Coyle et al. even remotely resembles a modified atmosphere packaging environment. As such, Coyle et al. nowhere are concerned with the problems addressed by Applicant's invention.

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The rejection of claim 44 recognizes this deficiency in the disclosure of Coyle et al. To overcome the same, the rejection relies upon Applicant's own disclosure. The rejection states that the admitted prior art is a method of adhering a nylon film to a sealant film where the sealant film is either coated with an antifog composition or is blended with such a composition. The disclosure at page 2, lines 9-19 of the instant specification is specifically relied upon. It was stated in the rejection that the use of an antifog composition is desirable to allow the package to be visible.

The Final Rejection then goes on to conclude that it would have been obvious to either blend an antifog composition with a sealant film or coat an antifog composition onto a sealant film in the process of forming a film as disclosed by Coyle et al. No specific reason is suggested for the addition of an antifog composition to the structure of Coyle et al.; apparently just because antifog-containing films are known it was concluded that it would have been obvious to use the same in the structure of Coyle et al. In addition, it was recognized that Coyle et al. does not specifically state that "the protective film prevents migration of the antifog composition from the sealant layer to the nylon layer when the laminate is rolled up" (emphasis added). However, it is asserted that one skilled in the art would "have readily recognized that the protective film (saran) of Coyle et al. prevents migration of the antifog composition, since the protective film is made of the same material used by applicant" (emphasis added).

It is respectfully submitted that one skilled in the art would not make the combination suggested in the rejection and that the reason for the combination is erroneous.

Firstly, Coyle et al. is totally silent on the use of an antifog composition. Why would anyone skilled in the art want to add an antifog composition to the structure of Coyle et al. and employ it in the same manner as used by Applicant. This is comparable to saying that anything could be added to the structure of Coyle et al. just because it exists. It is respectfully submitted that this is not a proper basis for predicated an obviousness rejection. Rather, there must be something from the prior

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art references or otherwise to motivate one skilled in the art to make the proposed modification.

Secondly, Coyle et al. disclose three separate embodiments – one without the saran, one where the saran is buried as an inside layer and one where the saran is an outside layer. It is submitted that even assuming arguendo that one skilled in the art would somehow want to modify the structure of Coyle et al., why would such person choose to do the substitution with the embodiment wherein the saran layer is on the outside? It would appear that there would be equal reasons to choose a structure where the saran is either not present or is an interior layer, since the saran layer in Coyle et al. is not a protective layer and is not intended as a protective layer. It is submitted that without the improper use of Applicant's own disclosure against him there would be no reason to construct a configuration in the manner suggested in the rejection.

There is absolutely no recognition in Coyle et al. that a saran layer would be a protective layer for preventing migration of a material in a polyethylene layer into a nylon layer when the multilayer film is wound up in a roll. Indeed, Coyle et al. do not refer to their saran layer as protecting anything, contrary to the assertion quoted above in the Final Rejection, and in fact such layer can be buried equally as being on the outside. This certainly would not suggest to one skilled in the art that the saran layer of Coyle et al. would be an effective shield against migration of an antifog composition into a nylon layer and therefore should be located on the outside of the structure of Coyle et al. Moreover, this does not suggest to one skilled in the art to even consider that an antifog composition should be added to the polyolefin layer of Coyle et al.

In summary, it is respectfully submitted that one skilled in the art would not be motivated to modify the process of Coyle et al., and even if there were such motivation the process as claimed in claim 43 would still not be shown.

The rejection of claim 44 was additionally based on the disclosure of Bauer et al. '358. It was recognized in the Final Rejection that neither Coyle et al. nor the

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admitted prior art discloses a method wherein the protective film comprises polyurethane. Reliance is made on the disclosure of Bauer et al. to bridge the gap in the other disclosures. It is respectfully submitted that Bauer et al. does not do so.

It was stated in the Final Rejection that Bauer et al. discloses a method of forming a multilayered film, wherein the "protective layer" (or outer layer 14) can comprise either polyvinylidene chloride or polyurethane (emphasis added). It was concluded that it would have been obvious to replace the polyvinylidene chloride layer of Coyle et al. with polyurethane since Bauer et al. teach them to be well known alternatives. It is respectfully submitted that Bauer et al. does not disclose these materials to be substitutable, especially in the use to which Applicant's invention is directed.

Bauer et al. disclose a film which is used to package meat for cooking in the package. Bauer et al. want a film that adheres well to the meat during cooking to prevent release of free moisture (referred to as purge) but also releases well after cooking. The prior art to Bauer et al. used an ionomer layer as the meat contact layer. Their invention was to include an anhydride containing layer (e.g., maleic anhydride) as the meat contact layer, since the anhydride material is less expensive than ionomers and meets FDA requirements for extractibles (and thus is permitted to be used in direct contact with the meat). The preferred material of Bauer et al. is Plexar, which is an anhydride modified polyethylene.

Bauer et al. has nothing to do with modified atmosphere packaging of meats (which are uncooked). There is no disclosure at all in Bauer et al. of using an antifog composition in a polyethylene layer.

Rather, Bauer et al. is directed to films for use in cook-in meat product applications. The structure of Bauer et al. requires at least two film layers, and preferably more. In the two layer embodiment (see Figure 1), Plexar is used as one layer and an abuse layer is used as another layer. In the Figure 2 embodiment, a six layer alternate structure is disclosed. The first layer 14 is the inside layer of the

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package and has a meat contact surface. Preferably layer 14 is Plexar, an anhydride containing polyethylene (see column 12, lines 38-55).

Contrary to the statement in the Final Rejection equating polyvinylidene chloride with polyurethane, it is pointed out that Bauer et al. do not suggest that these polymers are equivalent to each other. Rather, all Bauer et al. disclose is that the desired anhydride functionality can be present in a number of ways, including reaction with a large number of polymers that can be blended with the polyethylene. The relevant disclosure of Bauer et al is as follows:

"In general, first layer 14 comprises an anhydride functionality which can be merely blended in with the polymer, and/or reacted onto the polymer, and/or copolymerized (graft, random, etc.) in the polymer. The anhydride functionality can also be reacted onto a second polymer, which is thereafter blended with an unmodified linear low density polyethylene which makes up the majority of the first layer. In general, first layer 14 comprises at least one member selected from the group consisting of polyolefin, polystyrene, polyamide, polyester, polymerized ethylene vinyl alcohol, polyvinylidene chloride, polyether, polyurethane, polycarbonate, and starch-containing polymer; preferably, at least one member selected from the group consisting of polyolefin; more preferably, at least one member selected from the group consisting of ethylene α -olefin copolymer, propylene α -olefin copolymer, butene α -olefin copolymer, ethylene vinyl acetate copolymer, ethylene acrylate copolymer, and ethylene acrylic acid copolymer; still more preferably, linear low density polyethylene." [column 13, lines 16-33]

Thus, what Bauer et al. actually disclose is that a myriad of polymers (at least 10 different categories) can be reacted with or blended with an anhydride and used as layer 14. Among the many polymers mentioned are polyvinylidene chloride and polyurethane. However, it is respectfully submitted that there is nothing in the disclosure of Bauer et al. to suggest possibly equating the use in an anhydride functional application of these two polymers with their use in all other applications, much less that claimed herein. There are many polymers mentioned in Bauer et al. besides polyvinylidene chloride and polyurethane, and there is nothing to suggest that they are always equivalent.

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It is respectfully submitted that there is nothing to suggest from Bauer et al. or any other reference that polyurethane be substituted for polyvinylidene chloride in an antifog type of product, or a structure disclosed by Coyle et al. Also, the polyurethane layer of Bauer et al. would not act as a "protective layer" since it would be in the inward facing layer that is in contact with the meat to be cooked.

The structure of Coyle et al. which is suggested in the Final Rejection is closest to that claimed in Applicant's process is the embodiment where saran is on the outside of a nylon layer, and polyethylene is another outside layer (on the opposite side). It is respectfully submitted that it would not be proper to substitute a polyurethane for the saran (copolymer) layer of Coyle et al. Rather, if there were a proper substitution it is submitted that one skilled in the art would substitute one of the materials mentioned by Bauer et al. for the polyethylene layer of Coyle et al., not the saran layer. This is especially the case since the preferred material in Bauer et al. is a (modified) polyethylene and all of the other materials listed are indicated to be substitutions for the polyethylene.

Moreover, it is imperative that in the structure of Bauer et al. the additive (anhydride functionality) be in the most inwardly facing layer (the polyethylene layer). The other polymers mentioned for layer 14 would likewise be in the most inwardly facing layer in order to function as intended. This, it is submitted, would merely lead one skilled in the art to substitute any one of the other polymers mentioned by Bauer et al. for the polyethylene layer of Coyle et al. and not the saran layer in the Figure 3 embodiment of Coyle et al., since the polyethylene layer is the layer that is the most inwardly facing. Thus if any substitution would be made in this manner, the structure made by the instantly claimed process would not be achieved. There is much more reason to replace the polyethylene layer of Coyle et al. with the polyurethane layer of Bauer et al. than there is to replace the saran layer of Coyle et al. with a polyurethane layer.

It is also pointed out that layer 14 of Bauer et al. is intended to face (and indeed contact) the meat. Thus, this layer could be said to be analogous to the antifog containing layer (inward layer) used in a modified atmosphere multilayer film. If one

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were to combine the references as suggested, then either an anhydride containing material would be added to the antifog containing layer so as to be able to contact the meat, or any antifog material would be added to the Plexar layer of Bauer et al. In either case, there is no teaching of a polyurethane layer as a protective layer to prevent migration of an antifog composition from the polyethylene layer to the nylon layer.

Applicant also submits that Bauer et al. concerns art which is non-analogous to Coyle et al. Whereas Coyle et al. is concerned with a boilable bag, Bauer et al. is concerned with a package for cooking meats. And neither is remotely concerned with a modified atmosphere for packaging meats.

To summarize the proposed addition of Bauer et al. to the rejection of the claims, this reference is unconcerned with an antifog application. Rather, it wants to substitute anhydride-containing material for an ionomer. There is no protective layer together with an nylon layer in an antifog structure. There is no reason to select polyurethane as a material to be equivalent to saran in this application since many other polymers are mentioned by Bauer et al. The film layer of Bauer et al. is not employed as a protective layer to prevent migration of chemicals, much less an antifog composition from intruding into a nylon layer.

Accordingly, it is respectfully submitted that the proposed combination of references would not be made by one skilled in the art, and even if it were proper to combine them as suggested the presently claimed invention would still not be shown. Therefore, withdrawal of the rejection as it may apply to amended claim 43 is respectfully requested.

Claims 35, 47 and 54 were stated as rejected in the Final Rejection also in view of Brazier et al. (USP 3,840,427 – newly cited). It is believed that claim 46 was intended to be grouped here, rather than claim 47.

It was stated in the rejection that the combination of Coyle et al. and the admitted prior art are silent with respect to a method of biaxially orienting the nylon film. The rejection goes on to state that Brazier et al. discloses a laminate wherein a

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polyethylene film is adhered to a biaxially oriented nylon film (example 10) and a protective "polyvinylidene chloride" film is adhered to the nylon film. It was stated that the use of a biaxially oriented nylon film was advantageous because it produces a firmly adhered product with high heat seal strength. It was concluded that it would have been obvious to use a biaxially oriented nylon film in the above-suggested combination.

With regard to claims 35 and 46, these claims, which depend from claim 43, are submitted to be patentable over the suggested combination of references and that the rejection should be withdrawn.

Brazier et al. relates to flexible packaging films wherein nylon is used as an interior adhesive layer. The nylon layer of Brazier et al. is extrusion coated onto a non-primed polyolefin layer, rather than a primed layer as previously suggested. The nylon layer in Brazier et al. joins the polyolefin layer to another layer.

The first layer of Brazier et al. is a polyolefin film (column 2, lines 34-36). The film is corona discharge treated. A second film that is bonded to the polyolefin film may also be another polyolefin film, or a myriad of other films, namely polyester, vinyl, nylon, cellophane, paper and metallic foils (see column 2, line 63 to column 4, line 6). Contrary to what is stated in the Final Rejection, Brazier et al. do not disclose a polyvinylidene chloride film, but rather a "vinyl" film. One skilled in the art would recognize "vinyl" to refer to polyvinyl chloride, not polyvinylidene chloride as concluded in the Final Rejection.

In Example 10 of Brazier et al., the first (inner) layer is polyethylene, the adhesive is a nylon and the second (outer) layer is a biaxially oriented nylon. It is respectfully submitted that if one skilled in the art would utilize the disclosure of Brazier et al., such person would modify the Figure 2 embodiment of Coyle et al. where the nylon is likewise an outer layer, rather than the Figure 3 embodiment where saran is the outer layer. Any such combination would not result in the invention claimed in claim 35. Therefore, withdrawal of such rejection as may be applied to the present claim 35 is respectfully requested.

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Claim 46 is also considered to be patentable. This claim calls for the film to consist essentially of a sealant film, a nylon film and a protective film (polyurethane). Although Brazier et al. discloses a three layered structure, it is submitted that such disclosure would not lead one skilled in the art to change any film construction to a three layer construction. Therefore, it is respectfully submitted that claim 46 is patentable, at least for the same reasons as independent claim 43.

Claim 49 was rejected as being obvious over the combination of Coyle et al., the admitted prior art and Ossian (USP 4,640,852). It was stated that Coyle et al. and the admitted prior art are silent as to the nylon film being a combination of a first nylon layer, an EVOH layer and a second nylon layer. Ossian was relied upon as allegedly suggesting a multilayered film of a nylon layer and a sealant layer, with the nylon layer being a three layer structure (nylon/EVOH/nylon). It was considered obvious to use the three layered structure of Ossian since the EVOH is disclosed by him as providing excellent oxygen barrier properties and the nylon layer permits moisture to escape from the EVOH.

It is respectfully submitted that claim 49 is patentable, not only for the same reasons as claim 43 but also for the following reasons.

Ossian relates to a film which is retortable, such that products can be stored without refrigeration. Previous materials included reactive chemicals which leached out or required a metal foil that was non-microwavable and lacked clarity. Retort conditions are 250 up to 275 °F for a considerable time period (e.g., 30 minutes). Most packaging films do not stand up to these conditions. Although high density polyethylene and polypropylene can be used, these have increased permeation to water at elevated temperatures and thus may permit intrusion into the EVOH layer during retort.

Ossian's discovery is that nylon can be substituted for the polyolefin layers of previous designs. That is, whereas a structure previously comprised polyethylene/EVOH, it is suggested in Ossian to be nylon/EVOH or

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nylon/EVOH/nylon. Thus, the three layer structure of Ossian was a substitute for the polyethylene layer of the prior art.

It is respectfully submitted that there is no suggestion in Ossian for the substitution of the three layer structure of a single nylon layer, as postulated in the rejection. Also, retort applications are very different from packaging meat under modified atmosphere conditions. In the former, the food is cooked and stored. In the latter, the food is preserved in an uncooked state and the idea is to enhance its shelf life before cooking.

Even if Ossian were considered to be analogous prior art, it is submitted that if it were combined as suggested then the polyethylene layer (and not the nylon layer) of Coyle et al. would be substituted by the nylon/EVOH/nylon layer of Ossian. As a result, the process as claimed in claim 49 would not result. In addition, it is pointed out that Ossian discloses both a two layer structure and a three layer structure, and there is nothing to suggest that one skilled in the art would choose the three layer structure to be substituted rather than the two layer structure.

Therefore, it is respectfully submitted that claim 49 is also patentable and that the rejection thereof be withdrawn.

With respect to the other dependent claims, these are submitted to be patentable for the same reasons as claim 43.

SUMMARY

In view of the above amendments and remarks, it is respectfully submitted that claims 33-37, 43 and 46-50 are patentable and should be allowed. Therefore, entry of this Amendment and allowance of the application are respectfully requested. Alternatively, entry of this Amendment for purposes of appeal is respectfully requested as the issues on appeal would be reduced.

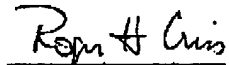
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An earnest attempt has been made to place this application in condition for allowance. If the Examiner believes that a discussion with Applicant's representative would in any way advance the prosecution, the Examiner is respectfully requested to telephone the undersigned.

Respectfully submitted,

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